CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 87-103
NPDES NO. CA0029203

WASTE DISCHARGE REQUIREMENTS FOR:

KTI CHEMICALS INCORPORATED
SUNNYVALE, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereafter called the Board), finds that:

1. KTI Chemicals Incorporated (hereinafter called the discharger) operates a chemical distribution facility on 1120 Sonora Court in Sunnyvale, Santa Clara County. The facility was constructed in 1973 and is involved with repacking, blending, and filtering of photo chemicals for various Silicon Valley industries. By application dated August 22, 1987, the company has applied for issuance of waste discharge requirements under the National Pollutant Discharge Elimination System (NPDES).

2. Subsurface investigations initiated in early 1983 revealed significant levels of organic chemical pollution (as high as 200 ppm) in the groundwater beneath the site, primarily odorless mineral spirits (OMS). The apparent source was a defective joint in the piping associated with the OMS underground tank. The latest information suggested that groundwater contamination was found localized on the discharger's site with no evidence of offsite migration. The contamination extends laterally 150 feet downgradient and vertically to a depth of about 25 feet.

3. The discharger has undertaken investigations to define the extent of pollution and has evaluated various remedial measures to remove OMS from the groundwaters. Because of the difficulty of removing OMS from the soil, the discharger concluded that in-situ biodegradation would be most cost effective remedial action approach for the cleanup of OMS. The proposed system involves by pumping groundwater to prevent further contaminant movement, then reinjecting the extracted water back into the ground along with added nutrients and oxygen to promote microbial breakdown of the contaminants. Extracted groundwater exceeding reinjection capacity will be discharged into a storm drainage system.

4. Waste 001 consists of approximately 9,000 gallons per day of extracted groundwater which will be discharged to a storm drain at the north west corner of 1170 Sonora Court. The storm drain is tributary to Calabazas Creek, Guadalupe Slough and South San Francisco Bay.

5. A Water Quality Control Plan for the San Francisco Bay Basin was adopted by the Board on July 21, 1982. The Basin Plan contains water quality objectives for Calabazas Creek and South San Francisco Bay.

6. The beneficial uses of Calabazas Creek include:
   : Agricultural supply
   : Groundwater recharge
   : Navigation
   : Contact and non-contact water recreation
   : Warm fresh water and cold fresh water habitat
   : Wildlife habitat

7. The beneficial uses of South San Francisco Bay include:

   : Contact and Non-contact water recreation
   : Wildlife habitat
   : Preservation of rare and endangered species
   : Estuarine habitat
   : Fish spawning and migration
   : Industrial service supply
   : Shellfishing
   : Navigation
   : Commercial ocean and sport fishing

8. The groundwater recharge use of Calabazas Creek will be protected by the effluent limits of this Order because studies indicate that concrete lined channel between the point of discharge and the Bayshore Freeway, and compacted clay liner between the Bayshore Freeway and Guadalupe Slough will preclude significant recharge of the creek banks and underlying aquifers.

9. The Basin Plan prohibits discharge of wastewater which has "particular characteristics of concern to beneficial uses" (a) "at any point in San Francisco Bay south of the Dumbarton Bridge" and (b) " at any point where the wastewater does not receive a minimum initial dilution of at least 10:1 or into any nontidal water, deadend slough, similar confined water, or any immediate tributary thereof".

10. The Basin Plan allows for exceptions to the prohibitions referred to in Finding 9 above when it can be demonstrated that a net environmental benefit can be derived as a result of the discharge.

11. Exceptions to the prohibitions referred to in Finding 9 are warranted because the discharge is an integral part of a program to cleanup polluted groundwater and thereby produce an environmental benefit, and because receiving water concentrations are expected to be below levels that would effect beneficial uses. Should studies indicate chronic effects not currently anticipated, the Board will review the requirements of this order based up Section B.1.e.

12. The Basin Plan prohibits discharge of "all conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Board, to waters of the Basin." The discharger's groundwater extraction and treatment system and associated operation, maintenance, and monitoring plan constitutes an acceptable control program for minimizing the discharge of toxicants to waters of the State.

13. Effluent limitations of this Order are based on the Basin Plan, State Plans and policies, Regional Board guidance document entitled "Discharge of Polluted Groundwater to Surface Waters", dated September 1985, and best engineering judgment.

14. The issuance of waste discharge requirements for this discharge is exempt form the provisions of Chapter 3 (commencing with section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

15. The Board has notified the discharger and interested agencies and persons of its intent to issue waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

16. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Effluent Limitations

1. The discharge of Waste 001 containing constituents in excess of the following limit is prohibited:

Constituent	Units	Instantaneous Maximum
Total concentration of odorless mineral spirits and associated biodegradation by-products	mg/l	0.100

2. The pH of the discharge shall not exceed 8.5 nor be less than 6.5.

3. In any representative set of samples, the discharge shall meet the following limit of quality:

TOXICITY:

The survival of test fishes in 96 hour bioassays of the effluent as discharged shall be a median of 90% survival and a 90 percentile value of not less than 70 percent survival.

B. Receiving Water Limitations

1. The discharge of wastes shall not cause the following conditions to exist in waters of the State at any place:

   a. Floating, suspended, or deposited macroscopic particulate matter or foam;

   b. Bottom deposits or aquatic growths;

   c. Alternation of temperature or apparent color beyond present natural background levels;

   d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

   e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within on foot of the surface:

a. Dissolved oxygen	5.0 mg/l minimum -median for any three consecutive months no less than 80% saturation. When natural factors cause lesser concentration (s) than specified above, the discharge shall not cause further reduction of the concentration of dissolved oxygen.
b. pH	the pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH levels by more than 0.5 units.

3. The discharge shall not cause a violation of any applicable water quality standards for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards

C. Provisions

1. The discharger shall comply with all sections of this order immediately upon adoption.

2. The discharger shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Executive Officer.

3. The discharger shall notify the Regional Board if any activity has occurred or will occur which would result in the discharge, on a frequent or routine basis, of any toxic pollutant which is not limited by this Order.

4. The discharger shall comply with all items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated December 1986, except items A.10, B.2, B.3, C.8, and C.11.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

KTI CHEMICALS INCORPORATED

SUNNYVALE

SANTA CLARA COUNTY

NPDES NO. CA0029203

ORDER NO. 87-103

CONSISTS OF

PART A Dec. 1986 as modified SBTD
JANUARY 1987 (w/appendices A-E)

PART B, adopted on August 19, 1987

PART B

KTI CHEMICALS INCORPORATED

SUNNYVALE, SANTA CLARA COUNTY

I. DESCRIPTION OF SAMPLING STATIONS

1. Description of sampling Stations

A. EFFLUENT

Station	Description
E- 001	Extracted groundwater from extraction well E3 prior to discharge to storm sewer.

b. RECEIVING WATERS

Station	Description
C- 001	At a point in storm drain prior to groundwater discharge into Calabazas Creek down stream from station E-001.

II. MISCELLANEOUS REPORTING

At least 30 days before any chemicals are utilized in or added to the treatment system, they shall be reported to the Executive Officer for review and approval.

III. SCHEDULE OF SAMPLING AND ANALYSIS

The schedule of sampling and analysis shall be that given as Table I (attached).

IV. MODIFICATIONS TO PART A

All items of Self Monitoring Program Part A, dated December 1986 and as modified January 1987 shall be complied with except for the following modifications:

A. Delete Sections D.2.e, D.2.g, E.3, and E.4.

B. Section G.4.b shall be changed to read as follows:

Compliance Evaluation Summary

"Each report shall be accompanied by a compliance evaluation summary sheet prepared by the discharger. The report format will be prepared similar to the example shown in APPENDIX A (attached). The discharger will prepare the format substituting for the example parameters those parameters and requirement limits for influent, effluent and receiving water constituents specified in the permit."

C. The first paragraph of Section G.4.d shall be changed to read as follows:

Results of Analyses and Observations

"Each report shall include tabulations of the results from each required analysis specified in Part B by date, time, type of sample, detection limit, station, and shall be signed by the laboratory director. The report format will be prepared similar to the examples shown in APPENDIX B, substituting those parameters specified in the permit for the parameters given in the example."

D. Information requested under Section G.4.e. shall be prepared in a format similar to EPA form 3320-1 and shall be submitted only to the Regional Board.

E. Section G.5 shall be modified to read as follows:

Annual Reporting

"By January 30 of each year, the discharger shall submit in place of the end of the year monthly report, an annual report to the Regional Board covering the previous calendar year. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year. In addition, the report shall contain a comprehensive discussion of the compliance record and the corrective actions taken or planned which may be needed to bring the dischargers into full compliance with the waste discharge requirements. The report format will be prepared by

the discharges using the examples shown in APPENDIX D (attached) substituting those parameters specified in the permit for the parameters given in the example and should be maintained and submitted with each regular self-monitoring report."

I, Roger B. James, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No.

2. Was adopted by the Board on August 19, 1987.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer.

ROGER B. JAMES
Executive Officer

Attachment: Table I

TABLE 1
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	E001		C001										
TYPE OF SAMPLE	G		G										
Flow Rate (mgd)	W												
BOD, 5-day, 20°C, or COD (mg/l & kg/day)													
Chlorine Residual & Dosage (mg/l & kg/day)													
Settleable Matter (ml/1-hr. & cu. ft./day)	M/Q												
Total Suspended Matter (mg/l & kg/day)	M/Q												
Oil and Grease (mg/l & kg/day)													
Coliform (Total or Fecal) (MPN/100 ml) per req't													
Fish Tox'y 96-hr. TL % Surv'l in undiluted waste	Q												
Ammonia Nitrogen (mg/l & kg/day)	Q		Q										
Nitrate Nitrogen (mg/l & kg/day)													
Nitrite Nitrogen (mg/l & kg/day)													
Total Organic Nitrogen (mg/l & kg/day)													
Total Phosphate (mg/l & kg/day)													
Turbidity (Jackson Turbidity Units)													
pH (units)	Q		Q										
Dissolved Oxygen (mg/l and % Saturation)	Q												
Temperature (°C)	M												
Apparent Color (color units)													
Secchi Disc (inches)													
Sulfides (if DO<5.0 mg/l) Total & Dissolved (mg/l)													
Arsenic (mg/l & kg/day)													
Cadmium (mg/l & kg/day)													
Chromium, Total (mg/l & kg/day)													
Copper (mg/l & kg/day)													
Cyanide (mg/l & kg/day)													
Silver (mg/l & kg/day)													
Lead (mg/l & kg/day)													

TABLE I (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	E001		C001										
TYPE OF SAMPLE	G		G										
Mercury (mg/l & kg/day)													
Nickel (mg/l & kg/day)													
Zinc (mg/l & kg/day)													
PHENOLIC COMPOUNDS (mg/l & kg/day)													
All Applicable Standard Observations													
Bottom Sediment Analyses and Observations													
Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day)													
Total ororless mineral spirits and associated	W/M		Q										
biodegradation by-products													
EPA Test Method 625	Q												

W/M -- Weekly for 2 months, Monthly thereafter M/Q--Monthly for 2 months, Quarterly thereafter

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
C-24 = composite sample - 24-hour
C-X = composite sample - X hours (used when discharge does not continue for 24-hour period)
Cont = continuous sampling
DI = depth-integrated sample
BS = bottom sediment sample
O = observation

TYPES OF STATIONS

I = intake and/or water supply stations
A = treatment facility influent stations
E = waste effluent stations
C = receiving water stations
P = treatment facilities perimeter stations
L = basin and/or pond levee stations
B = bottom sediment stations
G = groundwater stations

FREQUENCY OF SAMPLING

E = each occurence
H = once each hour
D = once each day
W = once each week
M = once each month
Y = once each year

2/H = twice per hour
2/W = 2 days per week
5/W = 5 days per week
2/M = 2 days per month
2/Y = once in March and once in September
Q = quarterly, once in March, June, Sept. and December

2H = every 2 hours
2D = every 2 days
2W = every 2 weeks
3M = every 3 months
Cont = continuous